

Internal Grooving Tool Holder

# Grooving Tool Holders SSH Series



Sumi Small

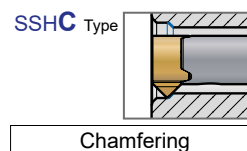
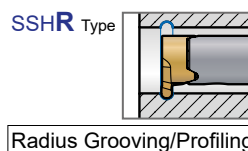
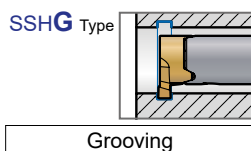
# Grooving Tools

## SSH Series



### Features

Tough carbide body for stable machining.  
Internal coolant supply for outstanding chip evacuation.  
Adopts AC1030U for excellent machined surface quality.  
In addition to grooving applications, we have a lineup of 12 items for circlip groove machining.



### Application Range



Width of Cut: 0,74 mm – 3,00 mm  
Min. Bore Diameter: Ø 8,0 mm  
Max. Groove Depth: to 4,0 mm  
Holder: Carbide body (internal coolant supply)  
Insert: Grade AC1030U



### Chip Control



SSH Series

Stable and smooth evacuation of curled chips even on small diameters.



Competitor

Evacuation from grooves is poor, inviting sudden breakage.

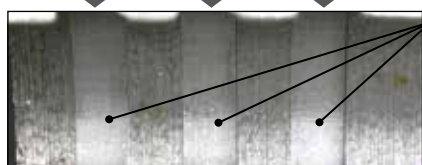


Work Material: C45  
Cutting Diameter: Ø 13 mm

Cutting Conditions:  $v_c = 50$  m/min,  $f = 0,02$  mm/rev,  $a_p = 1,0$  mm, wet (oil-based)

### Chatter Resistance

$f = 0,1$  mm/rev  $f = 0,2$  mm/rev  $f = 0,3$  mm/rev



SSH Series

No chatter  
Outstanding sharpness and carbide shank suppress chatter.

$f = 0,1$  mm/rev  $f = 0,2$  mm/rev  $f = 0,3$  mm/rev



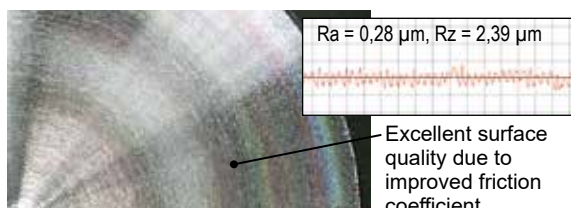
Competitor

Occurrence of chatter

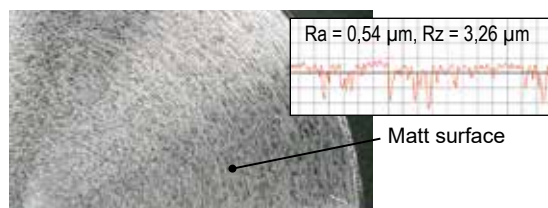
Work Material: C45  
Cutting Diameter: Ø 13 mm

Cutting Conditions:  $v_c = 100$  m/min,  $f = 0,01, 0,02, 0,03$  mm/rev,  $a_p = 0,2$  mm, wet (oil-based)

### Machined Surface Quality



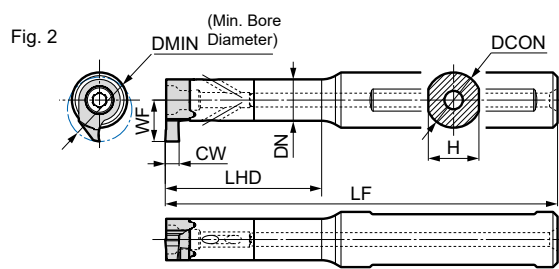
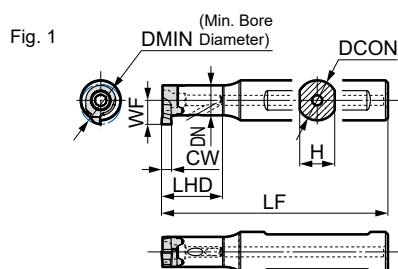
SSH Series



Competitor

Work Material: 42CrMo4  
Cutting Diameter: Ø 30 mm

Cutting Conditions:  $v_c = 180$  m/min,  $f = 0,02$  mm/rev,  $a_p = 0,2$  mm, wet (oil-based)



### Holder

Dimensions (mm)

### Parts

| Cat. No.          | Stock | DCON | DN | H  | LF* | LHD  | DMIN | CW        | Fig. | Applicable Insert | Flat Screw |     | Wrench |         |
|-------------------|-------|------|----|----|-----|------|------|-----------|------|-------------------|------------|-----|--------|---------|
|                   |       |      |    |    |     |      |      |           |      |                   |            |     |        |         |
| E08D SSHM N125 08 | ○     | 8    | 6  | 7  | 60  | 12,5 | 8    | 0,74–2,00 | 1    | SSH_ R/L 08 ...   |            | 1,2 |        | TRX08IP |
| E08E SSHM N210 08 | ○     | 8    | 6  | 7  | 70  | 21,0 | 8    | 0,74–2,00 | 1    |                   |            |     |        |         |
| E12E SSHM N125 08 | ○     | 12   | 6  | 11 | 70  | 12,5 | 8    | 0,74–2,00 | 1    |                   |            |     |        |         |
| E12F SSHM N210 08 | ○     | 12   | 6  | 11 | 80  | 21,0 | 8    | 0,74–2,00 | 1    |                   |            |     |        |         |
| E12G SSHM N300 08 | ○     | 12   | 6  | 11 | 90  | 30,0 | 8    | 0,74–2,00 | 1    |                   |            |     |        |         |
| E12H SSHM N420 08 | ○     | 12   | 6  | 11 | 100 | 42,0 | 8    | 0,74–2,00 | 1    | SSH_ R/L 14 ...   |            | 5,0 |        | LT15IP  |
| E12X SSHM N195 14 | ○     | 12   | 9  | 11 | 75  | 19,5 | 14   | 0,74–3,00 | 2    |                   |            |     |        |         |
| E12H SSHM N340 14 | ○     | 12   | 9  | 11 | 100 | 34,0 | 14   | 0,74–3,00 | 2    |                   |            |     |        |         |
| E12J SSHM N450 14 | ○     | 12   | 9  | 11 | 110 | 45,0 | 14   | 0,74–3,00 | 2    |                   |            |     |        |         |
| E12X SSHM N640 14 | ○     | 12   | 9  | 11 | 130 | 64,0 | 14   | 0,74–3,00 | 2    |                   |            |     |        |         |
| E16F SSHM N195 14 | ○     | 16   | 9  | 14 | 80  | 19,5 | 14   | 0,74–3,00 | 2    |                   |            |     |        |         |
| E16H SSHM N340 14 | ○     | 16   | 9  | 14 | 100 | 34,0 | 14   | 0,74–3,00 | 2    |                   |            |     |        |         |
| E16J SSHM N450 14 | ○     | 16   | 9  | 14 | 110 | 45,0 | 14   | 0,74–3,00 | 2    | SSH_ R/L 14 ...   |            | 5,0 |        | LT15IP  |
| E16X SSHM N640 14 | ○     | 16   | 9  | 14 | 130 | 64,0 | 14   | 0,74–3,00 | 2    |                   |            |     |        |         |

\* The LF dimensions above are dimensions with SSHG/SSHR type insert mounted. Refer to the insert stock table for WF dimensions.

### Inserts (E08\_ SSHM N\_ \_ \_ -08 / E12\_ SSHM N\_ \_ \_ -08)

Dimensions (mm)

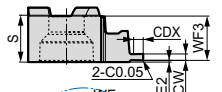
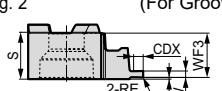
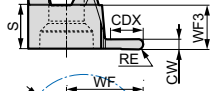
| Applications                                                     | Cat. No.          | AC1030U<br>Coated Carbide |      | CW   | CDX  | RE   | WF3  | WF   | S   | E2  | Fig. | Applicable Holder                      |                                        |
|------------------------------------------------------------------|-------------------|---------------------------|------|------|------|------|------|------|-----|-----|------|----------------------------------------|----------------------------------------|
|                                                                  |                   | R                         | L    |      |      |      |      |      |     |     |      |                                        |                                        |
| Grooving                                                         | SSHG R/L 0807400  | ○                         | ○    | 0,74 | 1,0  | —    | 3,2  | 4,80 | 3,6 | 0,4 | 1    | E08_SSHM N _ _ 08<br>E12_SSHM N _ _ 08 | Fig. 1 (For Grooving)                  |
|                                                                  | R/L 0808400       | ○                         | ○    | 0,84 | 1,0  | —    | 3,2  | 4,80 | 3,6 | 0,4 | 1    |                                        |                                        |
|                                                                  | R/L 0809400       | ○                         | ○    | 0,94 | 1,0  | —    | 3,2  | 4,80 | 3,6 | 0,4 | 1    |                                        |                                        |
|                                                                  | R/L 0810000       | ○                         | ○    | 1,00 | 1,0  | —    | 3,2  | 4,80 | 3,1 | —   | 1    |                                        |                                        |
|                                                                  | R/L 0810010       | ○                         | ○    | 1,00 | 1,0  | 0,10 | 3,2  | 4,80 | 3,1 | —   | 2    |                                        |                                        |
|                                                                  | R/L 0811900       | ○                         | ○    | 1,19 | 1,0  | —    | 3,2  | 4,80 | 3,1 | —   | 1    |                                        |                                        |
|                                                                  | R/L 0813900       | ○                         | ○    | 1,39 | 1,0  | —    | 3,2  | 4,80 | 3,0 | —   | 1    |                                        |                                        |
|                                                                  | R/L 0815000       | ○                         | ○    | 1,50 | 1,0  | —    | 3,2  | 4,80 | 3,0 | —   | 1    |                                        |                                        |
|                                                                  | R/L 0815010       | ○                         | ○    | 1,50 | 1,0  | 0,10 | 3,2  | 4,80 | 3,0 | —   | 2    |                                        |                                        |
|                                                                  | R/L 0816900       | ○                         | ○    | 1,69 | 1,0  | —    | 3,2  | 4,80 | 3,0 | —   | 1    |                                        |                                        |
|                                                                  | R/L 0820000       | ○                         | ○    | 2,00 | 1,0  | —    | 3,2  | 4,80 | 3,0 | —   | 1    |                                        |                                        |
| R/L 0820010                                                      | ○                 | ○                         | 2,00 | 1,0  | 0,10 | 3,2  | 4,80 | 3,0  | —   | 2   |      |                                        |                                        |
| R/L 0820020                                                      | ○                 | ○                         | 2,00 | 1,0  | 0,20 | 3,2  | 4,80 | 3,0  | —   | 2   |      |                                        |                                        |
| Radius Grooving/<br>Profiling                                    | SSHR R/L 08080    | ○                         | ○    | 0,80 | 1,0  | 0,40 | 3,2  | 4,80 | 3,1 | —   | 3    | E08_SSHM N _ _ 08<br>E12_SSHM N _ _ 08 | Fig. 2 (For Grooving)                  |
|                                                                  | R/L 08100         | ○                         | ○    | 1,00 | 1,0  | 0,50 | 3,2  | 4,80 | 3,1 | —   | 3    |                                        |                                        |
|                                                                  | R/L 08120         | ○                         | ○    | 1,20 | 1,0  | 0,60 | 3,2  | 4,80 | 3,1 | —   | 3    |                                        |                                        |
|                                                                  | R/L 08150         | ○                         | ○    | 1,50 | 1,0  | 0,75 | 3,2  | 4,80 | 3,0 | —   | 3    |                                        |                                        |
|                                                                  | R/L 08180         | ○                         | ○    | 1,80 | 1,0  | 0,90 | 3,2  | 4,80 | 3,0 | —   | 3    |                                        |                                        |
|                                                                  | R/L 08200         | ○                         | ○    | 2,00 | 1,0  | 1,00 | 3,2  | 4,80 | 3,0 | —   | 3    |                                        |                                        |
| Chamfering                                                       | SSHC R/L 08454502 | ○                         | ○    | —    | 1,4  | 0,20 | 1,8  | 4,65 | 3,6 | —   | 4    |                                        | Fig. 3 (For Radius Grooving/Profiling) |
| * Refer to the holder stock table for the DMIN dimensions above. |                   |                           |      |      |      |      |      |      |     |     |      |                                        |                                        |
| WF, WF3, E2: Cutting Edge Distance                               |                   |                           |      |      |      |      |      |      |     |     |      |                                        |                                        |
|                                                                  |                   |                           |      |      |      |      |      |      |     |     |      |                                        | Fig. 4 (For Chamfering)                |
|                                                                  |                   |                           |      |      |      |      |      |      |     |     |      |                                        |                                        |
|                                                                  |                   |                           |      |      |      |      |      |      |     |     |      |                                        | Fig. shows right hand (R) tools        |

# Grooving Tools

## SSH Series

### ■ Inserts (E12\_SSHM N\_\_\_-14 / E16\_SSHM N\_\_\_-14)

Dimensions (mm)

| Applications              | Cat. No.         | AC1030U<br>Coated<br>Carbide |   | CW   | CDX | RE   | WF3 | WF  | S   | E2  | Fig. | Applicable Holder                    |                                                                                                                                                                                                                                                                                                                                                                                               |
|---------------------------|------------------|------------------------------|---|------|-----|------|-----|-----|-----|-----|------|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                           |                  | R                            | L |      |     |      |     |     |     |     |      |                                      |                                                                                                                                                                                                                                                                                                                                                                                               |
| Grooving                  | SSHG R/L 1407400 | ○                            | ○ | 0,74 | 1,2 | —    | 5,3 | 9,0 | 5,5 | 0,2 | 1    | E12_SSHM N___-14<br>E16_SSHM N___-14 | Fig. 1 (For Grooving)<br><br>Fig. 2 (For Grooving)<br><br>Fig. 3 (For Radius Grooving/Profiling)<br><br>(Min. Bore Diameter)<br>DMIN |
|                           | R/L 1408400      | ○                            | ○ | 0,84 | 1,3 | —    | 5,3 | 9,0 | 5,5 | 0,2 | 1    |                                      |                                                                                                                                                                                                                                                                                                                                                                                               |
|                           | R/L 1409400      | ○                            | ○ | 0,94 | 1,5 | —    | 5,3 | 9,0 | 5,5 | 0,2 | 1    |                                      |                                                                                                                                                                                                                                                                                                                                                                                               |
|                           | R/L 1410000      | ○                            | ○ | 1,00 | 1,6 | —    | 5,3 | 9,0 | 5,5 | 0,2 | 1    |                                      |                                                                                                                                                                                                                                                                                                                                                                                               |
|                           | R/L 1410010      | ○                            | ○ | 1,00 | 1,6 | 0,10 | 5,3 | 9,0 | 5,5 | 0,2 | 2    |                                      |                                                                                                                                                                                                                                                                                                                                                                                               |
|                           | R/L 1411900      | ○                            | ○ | 1,19 | 4,0 | —    | 5,3 | 9,0 | 5,2 | —   | 1    |                                      |                                                                                                                                                                                                                                                                                                                                                                                               |
|                           | R/L 1413900      | ○                            | ○ | 1,39 | 4,0 | —    | 5,3 | 9,0 | 5,1 | —   | 1    |                                      |                                                                                                                                                                                                                                                                                                                                                                                               |
|                           | R/L 1415000      | ○                            | ○ | 1,50 | 4,0 | —    | 5,3 | 9,0 | 5,1 | —   | 1    |                                      |                                                                                                                                                                                                                                                                                                                                                                                               |
|                           | R/L 1415010      | ○                            | ○ | 1,50 | 4,0 | 0,10 | 5,3 | 9,0 | 5,1 | —   | 2    |                                      |                                                                                                                                                                                                                                                                                                                                                                                               |
|                           | R/L 1416900      | ○                            | ○ | 1,69 | 4,0 | —    | 5,3 | 9,0 | 5,1 | —   | 1    |                                      |                                                                                                                                                                                                                                                                                                                                                                                               |
|                           | R/L 1420000      | ○                            | ○ | 2,00 | 4,0 | —    | 5,3 | 9,0 | 5,1 | —   | 1    |                                      |                                                                                                                                                                                                                                                                                                                                                                                               |
|                           | R/L 1420010      | ○                            | ○ | 2,00 | 4,0 | 0,10 | 5,3 | 9,0 | 5,1 | —   | 2    |                                      |                                                                                                                                                                                                                                                                                                                                                                                               |
|                           | R/L 1420020      | ○                            | ○ | 2,00 | 4,0 | 0,20 | 5,3 | 9,0 | 5,1 | —   | 2    |                                      |                                                                                                                                                                                                                                                                                                                                                                                               |
|                           | R/L 1425000      | ○                            | ○ | 2,50 | 4,0 | —    | 5,3 | 9,0 | 5,1 | —   | 1    |                                      |                                                                                                                                                                                                                                                                                                                                                                                               |
|                           | R/L 1425010      | ○                            | ○ | 2,50 | 4,0 | 0,10 | 5,3 | 9,0 | 5,1 | —   | 2    |                                      |                                                                                                                                                                                                                                                                                                                                                                                               |
|                           | R/L 1425020      | ○                            | ○ | 2,50 | 4,0 | 0,20 | 5,3 | 9,0 | 5,1 | —   | 2    |                                      |                                                                                                                                                                                                                                                                                                                                                                                               |
|                           | R/L 1430000      | ○                            | ○ | 3,00 | 4,0 | —    | 5,3 | 9,0 | 5,1 | —   | 1    |                                      |                                                                                                                                                                                                                                                                                                                                                                                               |
|                           | R/L 1430010      | ○                            | ○ | 3,00 | 4,0 | 0,10 | 5,3 | 9,0 | 5,1 | —   | 2    |                                      |                                                                                                                                                                                                                                                                                                                                                                                               |
|                           | R/L 1430020      | ○                            | ○ | 3,00 | 4,0 | 0,20 | 5,3 | 9,0 | 5,1 | —   | 2    |                                      |                                                                                                                                                                                                                                                                                                                                                                                               |
| Radius Grooving/Profiling | SSHR R/L 14100   | ○                            | ○ | 1,00 | 1,6 | 0,50 | 5,3 | 9,0 | 5,2 | —   | 3    |                                      | Fig. shows right hand (R) tools.<br>○ = Japan stock                                                                                                                                                                                                                                                                                                                                           |
|                           | R/L 14120        | ○                            | ○ | 1,20 | 4,0 | 0,60 | 5,3 | 9,0 | 5,2 | —   | 3    |                                      |                                                                                                                                                                                                                                                                                                                                                                                               |
|                           | R/L 14150        | ○                            | ○ | 1,50 | 4,0 | 0,75 | 5,3 | 9,0 | 5,1 | —   | 3    |                                      |                                                                                                                                                                                                                                                                                                                                                                                               |
|                           | R/L 14180        | ○                            | ○ | 1,80 | 4,0 | 0,90 | 5,3 | 9,0 | 5,1 | —   | 3    |                                      |                                                                                                                                                                                                                                                                                                                                                                                               |
|                           | R/L 14200        | ○                            | ○ | 2,00 | 4,0 | 1,00 | 5,3 | 9,0 | 5,1 | —   | 3    |                                      |                                                                                                                                                                                                                                                                                                                                                                                               |
|                           | R/L 14220        | ○                            | ○ | 2,20 | 4,0 | 1,10 | 5,3 | 9,0 | 5,1 | —   | 3    |                                      |                                                                                                                                                                                                                                                                                                                                                                                               |
|                           | R/L 14250        | ○                            | ○ | 2,50 | 4,0 | 1,25 | 5,3 | 9,0 | 5,1 | —   | 3    |                                      |                                                                                                                                                                                                                                                                                                                                                                                               |
|                           | R/L 14300        | ○                            | ○ | 3,00 | 4,0 | 1,50 | 5,3 | 9,0 | 5,1 | —   | 3    |                                      |                                                                                                                                                                                                                                                                                                                                                                                               |

\* Refer to the holder stock table for the DMIN dimensions above.  
WF, WF3, E2: Cutting Edge Distance

○ = Japan stock

### ■ Recommended Cutting Conditions

| Work Material               | P Carbon Steel/Alloy Steel | M Stainless Steel | S Cast Iron |
|-----------------------------|----------------------------|-------------------|-------------|
| Cutting Speed $v_c$ (m/min) | 20–200                     | 15–80             | 20–160      |
| Feed Rate $f$ (mm/rev)      | 0,01–0,03                  | 0,01–0,03         | 0,01–0,03   |



CARBIDE - CBN - DIAMOND

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